

## **REMARKS**

### **Overview**

These remarks are set forth in response to the Non-Final Office Action.

Presently, claims 1-21 are pending in the Patent Application. Claims 1, 8, and 15 are independent in nature. Favorable reconsideration and allowance of the pending claims are respectfully requested.

Although Applicant disagrees with the broad grounds of rejection set forth in the Office Action, Applicant has amended claims 1, 4-6, 8, 15, and 18 in order to facilitate prosecution on the merits. Claims 1, 8, and 15 were amended to include material from dependant claims 3, 10, and 17, respectively. These dependant claims provide support for the amendment of claims 1, 8, and 15. Claims 4-6 and 18 were amended to adjust the claims from which they depend, based on the amendments of the independent claims. As such, no new matter has been added. As a result of these amendments, Applicant has cancelled claims 3, 10, and 17.

### **Allowable Claims**

We would like to thank the Examiner for indicating the allowability of claims 4-5 if amended to include all of the limitations of the base claims and any intervening claims. Applicant respectfully submits, however, that these claims represent patentable subject matter as currently listed based on the amendments and remarks given for the independent claims as discussed in detail below. Applicant would like to respectfully reserve the right, however, to amend the allowable claims into independent form during further prosecution if warranted.

### **35 U.S.C. § 102**

Claims 1-3, 6, and 8-11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,293,401 to Serfaty (hereinafter "Serfaty").

Applicants respectfully traverse the rejection, and requests reconsideration and withdrawal of the anticipation rejection.

The factual determination of anticipation under 35 U.S.C. § 102 requires the identical disclosure, either implicitly or inherently, of each element of a claimed invention in a single reference. Moreover, the anticipating prior art reference must describe the recited invention with sufficient clarity and detail to establish that the claimed limitations existed in the prior art and that such existence would be recognized by one having ordinary skill in the art. Absence from an allegedly anticipating prior art reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible, Inc., 793 F.2d 1565, 1571 (Fed. Cir. 1986) (emphasis added).

Applicant submits that Serfaty fails to teach each and every element recited in claims 1-3, 6, and 8-11 and thus they define over Serfaty. For example, with respect to claim 1, Serfaty fails to teach at least the following language:

generating a set of threshold values using said maximum likelihood estimate

This language has been amended into claim 1 from claim 3. According to the Office Action, the above-recited language is disclosed by Serfaty at Col. 6 lines 45-50. This assertion is respectfully traversed.

Applicant respectfully submits that claim 1 defines over Serfaty because Serfaty fails to disclose, teach or suggest at least generating a set of threshold values using the maximum likelihood estimate. As provided for in the Specification at paragraph [0083], generating a set of threshold values using said maximum likelihood estimate provides a significant technical advantage because the threshold technique provides a more accurate channel impulse response estimate than the maximum likelihood estimation technique used alone, particularly for low signal-to-noise ratios. As stated in the Office Action, this language is disclosed by Serfaty at Col. 6 lines 45-50. However, in relevant part, Serfaty at that cite states, "The output of the DFE is compared to a set of predetermined thresholds to derive the estimated symbols." Applicant respectfully submits that generating a set of threshold values using the maximum likelihood estimate is different than using a set of predetermined thresholds, as those threshold values will not be

responsive to the particular details of the current maximum likelihood estimate. In characterizing Serfaty, the Office Action states that “The output of the decision feedback equalizer contains the maximum likelihood as mentioned above and a set of predetermined threshold values are generated.” However, Applicant respectfully submits that whether or not the decision feedback equalizer contains the maximum likelihood estimate, they can find no teaching in Serfaty corresponding to using that maximum likelihood estimate in the generation of the threshold values. Instead, those threshold estimates are “predetermined”, and not based upon the maximum likelihood estimate. Consequently, Serfaty fails to provide an identical disclosure of at least this element of the claimed subject matter.

Absence from Serfaty of the above-mentioned claim elements negates anticipation. Accordingly, Applicant respectfully requests removal of the anticipation rejection with respect to claim 1. Furthermore, Applicant respectfully requests withdrawal of the anticipation rejection with respect to claims 2 and 6, which depend from claim 1, and therefore contain additional features that further distinguish these claims from Serfaty.

Independent claim 8 recites elements similar to those recited in claim 1. Therefore, Applicant respectfully submits that claim 8 is not anticipated and are patentable over Serfaty for reasons analogous to those presented with respect to claim 1. Accordingly, Applicant respectfully requests removal of the anticipation rejection with respect to claim 8. Furthermore, Applicant respectfully requests withdrawal of the anticipation rejection with respect to claims 9 and 11 that depend from claim 8, and therefore contain additional features that further distinguish these claims from Serfaty.

### **35 U.S.C. § 103**

Claims 7 and 12-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Serfaty in view of United States Publication No. 2003/0185310 to Ketchum et al. (hereinafter “Ketchum”). Claims 15-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ketchum in view of Serfaty. Claims 20-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Serfaty in view of United States Publication

No. 2006/0114981 to Ghosh et al. (hereinafter "Ghosh"). Applicants respectfully traverse the rejections, and requests reconsideration and withdrawal of the rejections.

Applicant respectfully submits that the cited references, taken alone or in combination, fail to teach or suggest every element recited in claims 7, 12-16, and 18-21. Therefore claims 7, 12-16, and 18-21 define over the cited references whether taken alone or in combination. For instance, independent claim 15 recites features similar to those recited in claim 1. As previously discussed, Serfaty fails to disclose, teach or suggest every element recited in claims 1 and 8. The other cited references also fail to disclose, teach or suggest the missing language of claims 1 and 8. Therefore, Applicant respectfully submits that claim 15 is not obvious and are patentable over the cited references for reasons analogous to those presented with respect to claims 1 and 8. Accordingly, Applicant respectfully requests removal of the obviousness rejection with respect to claims 15. Furthermore, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. *See* MPEP § 2143.03, for example. Accordingly, Applicant respectfully requests withdrawal of the obviousness rejection with respect to claims 7, 12-14, 16, and 18-21 that depend from claims 1, 8, and 15, and therefore contain additional features that further distinguish these claims from the cited references.

### **Conclusion**

For at least the above reasons, Applicant submits that claims 1-21 recite novel features not shown by the cited references. Further, Applicant submits that the above-recited novel features provide new and unexpected results not recognized by the cited references. Accordingly, Applicant submits that the claims are not anticipated nor rendered obvious in view of the cited references.

Applicant does not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the dependent claims discussed above. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references, taken alone or in combination, based on additional features contained in the dependent claims

that were not discussed above. A detailed discussion of these differences is believed to be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

It is believed that claims 1-21 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

The Examiner is invited to contact the undersigned at 724-933-9338 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to the credit card in the previously filed credit card authorization form.

Respectfully submitted,

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